REMARKS

Summary

This Amendment is responsive to the Office Action mailed on June 10, 2003. Claims 1, 7, 8, 12, 18, 19, 23, and 24 are amended. Claims 25 and 26 are new. Claims 2 and 13 are cancelled. Claims 1, 3-5, 7-12, 14-16, and 18-26 are pending.

The Examiner has now withdrawn his indication set forth in the previous Office Action that claims 6-8 and 17-19 contain allowable subject matter.

Page 7 of Applicants' specification is amended herein to include filing information relating to a patent application which was not available at the time of filing the present application.

Claims 1, 3, 5, 7, 8, 12, 12, 14, 16, 18, 19, 23 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sugisaki (US 5,535,275).

Claims 4 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sugisaki in view of Schroeder (US 3,784,743).

Claims 2 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sugisaki in view of Thompson (US 5,185,794).

Claims 9-11 and 20, 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sugisaki in view of Thompson.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sugisaki in view of Bando (US 5,774,548).

Applicants respectfully traverse these rejections in view of the amended claims and the following comments.

Discussion of Amended Claims

Claims 1, 7, 8, and 23 are amended to include the subject matter of claim 2. Claim 2 is cancelled to avoid duplication of claimed subject matter. Claim 1 is also amended to delete the subject matter previously contained in claim 6 (previously cancelled), which was added by amendment to claim 1 in response to the previous Office Action.

Claims 12, 18, 19, and 25 are amended to include the subject matter of claim 13. Claim 13 is cancelled to avoid duplication of claimed subject matter. Claim 12 is also amended to delete the subject matter previously contained in claim 17 (previously cancelled), which was added by amendment to claim 12 in response to the previous Office Action.

New claims 24 and 25 contain the subject matter which has been deleted from claims 1 and 12, respectively. New claims 24 and 25 were previously presented as original claims 6 and 17, which were cancelled in response to the previous Office Action.

Discussion of Sugisaki and Thompson

Each of Applicants' independent claims are amended herein to include the subject matter of either claim 2 or claim 13. The Examiner has rejected claims 2 and 13 based on the combination of Sugisaki and Thompson.

Sugisaki discloses techniques for preventing a digital VTR from recording copy protected video signals received in analog form. Various scrambling techniques are described at Columns 7-10 of Sugisaki. In general, Sugisaki discloses scrambling of data in a compressed domain (i.e. as part of compression coding circuit 14 of Figure 11).

Thompson discloses a system for scrambling video signals wherein alternate lines of a frame of a television signal are inverted. At predetermined lines, a skip is made in the alternation process so that the invert/don't invert alternation process is not entirely periodic across the frame (Co. 2, lines 49-54).

In rejecting Applicants' claims 2 and 13, the Examiner indicates that Thompson "discloses having dynamic range data available for the compression (scrambling) modes (Col. 9, lines 25-35)" (Office Action, page 4). Applicants respectfully submit that the Examiner has misinterpreted Thompson.

The portion of Thompson referred to by the Examiner states as follows:

> Each audio frame 31 further includes a frame sync portion 31c (FS, 16 bits) at its beginning and a control data portion 31d (CD, 16 bits) following to indicate whether the information is stereophonic, monophonic and whether the amplitude compression is according to an A mode or a B mode. Range data 31e (RD, 32 bits) is also included to indicate the dynamic range of the A or B compression modes. Furthermore, an independent data section 31f (ID, 7x32 bits) provides space for general information.

Thompson, Column 9, lines 25-35 (emphasis added).

Applicants' submit that the passage from Thompson reproduced above merely describes the header portion of a PCM audio file, which includes, among other things, dynamic range information. Thompson does not disclose or remotely suggest that this dynamic range information contained in a PCM header may be used to effect scrambling or descrambling of audio data in any way. Further, Thompson does not disclose or remotely suggest that such dynamic range information may be used to select a number of least significant bits to be scrambled (or descrambled) in a digital sample, while preserving a number of most significant bits in each digital sample to provide scrambled (or descrambled) samples, as claimed by Applicants.

With Applicants' claimed invention, the dynamic range is used to select a number of least significant bits to be scrambled. In other words, rather than scramble the sample over its entire dynamic range, a portion of the range is preserved so that the content is degraded but still recognizable, for example during fast forward playback. This feature allows a user to conveniently fast forward through audio or video content to locate a precise segment of interest (see, e.g., Applicants' specification, page 12, lines 24-31).

The portion of Thompson cited by the Examiner merely suggests that the dynamic range data is provided in connection with the compression mode used. The Examiner has apparently mistakenly equated the compression performed in Thompson with the scrambling claimed by Applicants. Those skilled in the art will appreciate that the operations of

scrambling and compression are significantly different. Further, Thompson does not even appear to indicate that the range data is used in compressing the audio signals, much less in scrambling them.

In contrast to Applicants' invention, the scrambling scheme discloses in Thompson achieves scrambling of data by inverting alternate lines of a frame of a television signal as shown in Figure 2B and described at Column 10, lines 3-16. At predetermined lines, a skip is made in the alternation process so that the invert/don't invert alternation process is not entirely periodic across the frame. Thompson does not disclose or remotely suggest using dynamic range information of the sample to be scrambled or descrambled in its scrambling or descrambling scheme.

The Examiner has further indicated that the features of Applicants' claims 9-11, 20, and 21 are disclosed by Thompson. Applicants' claims 9-11, 20 and 21 specify embedding the scrambling key, at least in part, into the scrambled samples for use at a decoder in descrambling the scrambled samples.

The Examiner indicates that Column 9, lines 36-60 disclose "embedding the decryption keys (descrambling keys) in the independent data portion of each frame (current, previous) so that the sample can be descrambled" (Office Action, page 5). Applicants' respectfully submit that the Examiner has mischaracterized Thompson. The portion of Thompson referred to by the Examiner teaches only that certain information is placed in the independent data field of the audio stream. The independent data field of the audio stream is not equivalent to the "scrambled sample"

claimed by Applicants. In Applicants' claims 9-11, 20 and 21 the scrambling keys are embedded into the actual scrambled samples directly so that the keys are inseparable from the scrambled content.

Thompson does not disclose or remotely suggest embedding the scrambling key, at least in part, into the scrambled samples for use at a decoder in descrambling the scrambled samples, as set forth in Applicants' claims 9-11, 20, and 21.

Discussion of Bando

The Examiner has rejected claim 22 based on the combination of Sugisaki and Bando. Applicants' claim 22 specifies that the scrambling key is scrambled after descrambling the scrambled sample in the descrambling step.

Bando discloses only the encryption of the scrambling key at the transmitting side (Col. 1, lines 30-36). As set forth in Applicants' claim 22, the scrambling key is scrambled after descrambling the scrambled sample. In other words, with Applicants' invention, after the scrambling key is used at the receiving side, the key is scrambled. In this manner the key is safeguarded from pirates.

Bando does not disclose or remotely suggest scrambling of the key after the descrambling step, as claimed by Applicants in claim 22.

In view of the above, Applicants respectfully submit that the claimed invention is not anticipated by and would not have been obvious to one skilled in the art in view of

Sugisaki, taken alone or in combination with Thompson, or any of the other references of record.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims and the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) is therefore respectfully requested.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,

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